

## REMARKS

All claims presently stand rejected as either anticipated by or obvious in view of U.S. Patent 5,805,868 to Murphy. For the reasons set forth herein, Applicants respectfully traverse these rejections and request that they be withdrawn.

### *FINAL-Office Action Not Fully Responsive to Applicants' Prior Response*

Pages 2-5 of the FINAL Office Action set forth the rejections of the presently-pending claims. These rejections repeat, essentially word-for-word, the rejections set forth in the previous (non-FINAL) Office Action. On page 6, the FINAL Office Action sets forth its response to Applicants' previous remarks (see "Response to Arguments"). This response, however, it is incomplete insofar as it fails to address various distinctions that were previously discussed by the Applicants. In this regard, the response set forth in the Office Action only addresses the fundamental distinction that was discussed in Applicants' previous response. In addition to the fundamental distinction, which was set forth by the Applicants, a number of additional distinctions discussed in the previous response, and these additional distinctions have not been addressed in the present Office Action.

For example, additional distinctions were also set forth in connection with the other independent claims. The present Office Action has failed to address these additional distinctions and consequently is incomplete and non-responsive. In addition, in Applicants' prior response Applicants noted certain legal deficiencies with regard to the application of the Murphy reference under 35 USC § 103. The present Office Action, however, has wholly failed to address or otherwise respond to the legal shortcomings of the prior rejection.

Further still, both of the Office Actions to date have failed to properly apply teachings of the Murphy patent to the dependent claims. For example, claim 2 of the present application

defines “the subregion is a scissor region.” The Office Action alleges that “Murphy teaches the subregion is a scissor region (col. 9, lines 52-61; col. 44, lines 55-59).” (Office Action p. 3, line 3). Applicants respectfully disagree. This cited portion of Murphy states, in total:

The Scissor and Stipple Unit. This unit does 4 tests on the fragment (as embodied by the active step message). The screen scissor test takes the coordinates associated with the step message, converts them to be screen relative (if necessary) and compares them against the screen boundaries. The other three tests (user scissor, line stipple and area stipple) are disabled for this example. If the enabled tests pass then the active step is forwarded onto the next unit, otherwise it is changed into a passive step and then forwarded.

...

Two scissor tests are provided in GLINT, the User Scissor test and the Screen Scissor test. The user scissor checks each fragment against a user supplied scissor region; the screen scissor checks that the fragment lies within the screen.

As can be readily verified from even a cursory reading, this cited portion of Murphy teaches only of the existence of a “scissor and stipple unit,” and the operation of the scissor unit to check whether a fragment lies within a region or within the screen. Significantly, this cited portion of Murphy is wholly devoid of any teaching that the subregion (being cleared by a clear command) is a scissor region. Accordingly, the application of this portion of Murphy is misplaced. Other portions of Murphy have been similarly misapplied to other dependent claims as well.

Accordingly, the status of FINAL should be withdrawn from the present Office Action, and any ensuing Office Action should be mailed that is fully responsive to all arguments set forth by the Applicants in their previous response (as well as this response). Any such ensuing Office Action should be made non-FINAL, as it would necessarily embody new bases for rejection that have not been necessitated by any amendments made herein.

***Applicants' Prior Response is Incorporated Herein by Reference***

Applicants continue to disagree with the basic rejections set forth in the Office Action for at least the same reasons that were discussed in the Applicants' previous response. Therefore, Applicants incorporate by reference the contents of their prior response, and repeat and reallege the arguments set forth in that response, as if set forth herein. In addition, Applicants set forth the following additional remarks in distinctions.

***Additional Distinctions***

Before addressing the individual claims, Applicants set forth the following responsive discussion with respect to the fundamental distinction. The Office Action appears to make inconsistent application of terms from the Murphy patent. As one example, consider the term "frame count value" used in Murphy. In lines 3-5 of the last paragraph of page 6 of the Office Action, the Office Action equates the "frame count value" of Murphy to the claimed "current clear count for the region" of the present application. However, on page 3 of the Office Action (in connection with the rejections of claims 2-7, the Office Action equates the "frame count value" of Murphy to a "color value" of the present application. Simply stated, the "frame count value," as used in Murphy, must be applied consistently against the claim terms of this application. It cannot be asserted to have one meaning in one instance, and another meaning in another instance. Accordingly, the undersigned respectfully submits that the rejections advanced by the Office Action are inconsistent and should be either withdrawn or revised. In either event, the FINAL status of the Office Action is inappropriate and should be withdrawn.

Rather than the further debate semantics over the proper meaning to accord phrases and terms used in Murphy, the undersigned points to a more central feature of the claimed

embodiments. Namely, the claimed embodiments are directed to systems and methods that clear a region (or subregion) in response to a single clear command. In contrast, the system disclosed in the Murphy patent amortizes the clearing of a depth buffer and/or a stencil buffer over a number of clear operations issued by an application. (see column 4, lines 25-28). As is specifically taught in Murphy, an area to be cleared (e.g., window or screen) is divided up into  $n$  regions, where  $n$  is the range of the frame counter. Every time the application issues a clear command, the reference frame counter is incremented. Therefore, the system of Murphy will require  $n$  clear commands to clear an entire area (window or screen).

Indeed, the dilemma encountered in amortizing the clearing function is acknowledged in Murphy by the recognition that there are “three important cases to consider” (col. 4, line 62). Col. 4, line 63 through col., 5 line 7 further detail the three important cases that must be considered by the system of Murphy. In contrast, the fast clear operation performed by the presently claimed invention does not amortize the clear operation in this way, and this reflects a fundamental distinction between the presently claimed invention and the system disclosed in Murphy.

***Independent Claims 1, 8, 27 and 28***

The Office Action rejected independent claims 1, 8, 27 and 28 under 35 U.S.C. §102(b) as allegedly anticipated by Murphy (USPN 5,805,868).

**Independent Claim 1**

Independent claim 1 recites:

1. A method of performing clear operations in a region having a subregion, comprising:  
***responsive to a clear command:***

*leaving a current clear count for the region unchanged;*  
writing a predetermined value into each of the pixels of the subregion, but not  
into the pixels outside the subregion; and  
*writing the current clear count into clear count storage locations*  
*corresponding to each of the pixels of the subregion, but not into*  
*clear count storage locations corresponding to the pixels outside the*  
*subregion.*

(*Emphasis added.*) Applicants respectfully submit that claim 1 patently defines over the cited art for at least the reason that Murphy fails to disclose the features emphasized above.

As discussed above, Murphy fails to disclose (and in fact teaches the opposite) the step of leaving a current clear count for the region unchanged, *in response to a clear command.*

In applying Murphy to this element, the Office Action states: “leaving a current clear count for the region unchanged (the frame count is found to be the same as the reference frame count...)”. In applying Murphy in this way, the Office Action equates the Applicants’ claimed “current clear count” with the “frame count” in Murphy. Even assuming, for the sake of argument, that these terms can be so equated, the rejection is misplaced, because Murphy teaches the complete opposite. In this regard, Murphy specifically teaches that “Every time the application issues a clear command the reference frame counter is incremented.” If the Examiner believes that the “frame count” in Murphy is something other than the value held by the reference frame counter, then the undersigned respectfully requests that the Examiner point to the location(s) within Murphy that describe the distinction to be drawn in these terms.

In addition, Murphy fails to teach the “writing of the current clear count into clear count storage locations corresponding to each of the pixels of the subregion.” The Office Action alleges that this is taught by the teaching of “clearing at least some other portions of the respective data values; and not clearing the data values of at least some other pixels” of col. 59, lines 15-17. Applicants disagree. First, the cited teaching of Murphy is discussing a

FrameCount value, which refers to an 8-bit field shown in FIG. 5B (which is not the same as the clear count of Applicants' claim). For at least these reasons, this application of Murphy against claim 1 is misplaced.

In addition, that teaching of Murphy more completely states:

... and for pixels located in the subregion corresponding to the new framecount value, setting the framecount data equal to the new framecount value, and clearing at least some other portions of the respective data values; and not clearing the data values of at least some other pixels.

Thus, Murphy expressly teaches clearing *some* portions of the data values and *not* clearing the data values of some other pixels. In contrast, claim 1 requires that the writing of the clear count take place into clear count storage locations corresponding to *each* of the pixels of the subregion.

Although there are other distinctions between claim 1 and Murphy, the differences noted above clearly define claim 1 over Murphy, and the rejection should be withdrawn.

#### **Dependent Claims 2-7**

Claims 2-7 each depend from claim 1 and patently define over Murphy for at least the same reasons as claim 1. In addition, claim 2 defines the subregion to be a scissor region. As noted above, the Office Action's application of Murphy to claim 2 is misplaced.

With regard to claim 3, claim 3 defines the subregion as a viewport. The Office Action rejected this claim alleging only that "the screen or window is divided up into n regions where n is the range of the frame counter." The undersigned fails to

see how this constitutes a proper teaching of the claimed viewport, and accordingly submits that the rejection is misplaced and should be withdrawn.

With regard to claim 4, claim 4 defines that “the predetermined value is a color value.” The Office Action cites col. 58, lines 38-38 of Murphy as allegedly teaching this. In fact, this cited portion of Murphy states only that “a RAMDAC, which provides analog color values in accordance with the color values read out from the VRAM.” This, however, is not what the Applicants have claimed in claim 4. Claim 4 specifies that the predetermined value that is written into each of the pixels is a color value. The cited portion of Murphy wholly fails to provide such a teaching, and Applicants respectfully request that the rejection be withdrawn as misplaced. Claims 5 and 6 each depend from claim 4 and therefore patently define over Murphy for at least the same reason.

#### **Independent Claim 8**

Claim 8 recites:

8. A method of performing clear operations in a region having a subregion, comprising:  
*prior to creation of the subregion*, responding to clear commands for the region according to a fast clear technique;  
*after creation of the subregion and during the life of the subregion*, responding to clear commands for the region by:  
    *leaving a current clear count for the region unchanged;*  
writing a predetermined value into each of the pixels of the subregion, but not into the pixels outside the subregion; and  
    *writing the current clear count into clear count storage locations corresponding to each of the pixels of the subregion, but not into clear count storage locations corresponding to the pixels outside the subregion;* and  
*after discontinuance of the subregion*, resuming responding to clear commands for the region according to the fast clear technique.

*(Emphasis added.)* Applicants respectfully submit that claim 8 patently defines over the cited art for at least the reason that Murphy fails to disclose the features emphasized above.

Claim 8 patently defines over Murphy for at least the same reasons that claim 1 defines over Murphy, as claim 8 includes the same defining features of claim 1 (discussed above).

In addition, and as a separate and independent reason for the patentability of claim 8, the “subregion” of the Applicants’ claims is different than the “region” disclosed in Murphy. Murphy discloses subdividing a window into  $n$  regions, and only one of the  $n$  regions is cleared at a time (with each successive clear command issued by an application, a FrameCount value is increased to cause a next region to be cleared). In the claims of the present application, all pixels in a subregion are cleared in response to a clear command (as opposed to artificially subdividing a region to be cleared, solely to speed the clear process). This is clear from the fact that the clear count for the region of the claims of the present application is unchanged (where Murphy teaches the incrementing of a FrameCount to cover – one by one – all subregions in a region to be clear). Thus, in Murphy, if a window was divided into 16 regions, it would take 16 clear commands to fully clear the window.

Further still, Murphy contemplates only one fast clear technique: one that involves dividing an area (e.g., window or screen) into a plurality of regions, with each individual region being cleared by a clear command (thus, requiring a plurality of clear commands to clear the area). In contrast, claim 8 defines a method that calls for the implementation of a known (e.g., prior art) fast clear technique prior to the creation of a subregion. However, after the creation of a subregion (and throughout the life of the subregion) responding to a clear command by leaving a current clear count for the region unchanged (e.g. NOT incrementing a clear count), *writing a predetermined valued into each of the pixels of the subregion, but*



*not into the pixels outside the subregion, and writing the current clear count into clear count storage locations corresponding to each of the pixels of the subregion, but not into clear count storage locations corresponding to the pixels outside the subregion.* Murphy wholly fails to teach these claimed features.

For at least this additional reason, claim 8 defines over the teachings of Murphy, and the rejection should be withdrawn.

#### **Dependent Claims 9-17**

Claims 9-17 each depend from claim 8 and patently define over Murphy for at least the same reasons as claim 8. Further, Applicants respectfully submit that Murphy fails to teach the claimed features of these dependent claims, and that the Office Action as made misplaced applications of Murphy to these claims. For example, claim 10 recites: “wherein the fast clear technique is a striped fast clear technique.” In rejecting this claim, the Office Action states: “fast clear technique is a striped fast clear technique (for local buffer coordinates, col. 26, lines 47-56).” However, this portion of Murphy actually states:

...For arbitrary width screens, for instance bitmaps in ‘off screen’ memory, the next largest width from the table must be chosen. The difference between the table width and the bitmap width will be an unused strip of pixels down the right hand side of the bitmap.

Note that such bitmaps can be copied to the screen only as a series of scanlines rather than as a rectangular block. However, often windowing systems store offscreen bitmaps in rectangular regions which use the same stride as the screen. In this case normal bitblts can be used.

As can be verified from even a cursory review, this cited portion of Murphy wholly fails to teach the claimed use of a striped fast clear technique.

Applicants traverse the application of Murphy to claim 11 for similar reasons. In this regard, claim 11 further defines claim 10 by stating “wherein the resuming step occurs

without changing strip definitions for the region.” The Office Action cites col. 28, lines 19-31 as allegedly teaching this feature. Applicants respectfully disagree. The cited portion of Murphy is not quoted in this response, but a cursory reading of that portion of Murphy reveals that it wholly fails to disclose the claimed teaching.

Indeed, it appears that the Office Action has applied certain teaching of Murphy to the present claims based upon certain select word matches. That is, it appears as though certain words from the Applicants’ claims may have been electronically searched and portions of Murphy containing a match in these terms (even though the underlying content does not match) were applied as anticipating the claimed invention.

For at least the foregoing reasons, the rejections of dependent claims 9-17 are misplaced and should be withdrawn.

#### **Independent Claims 27-28**

Claims 27 and 28 recite:

27. Computer program code embodied in a machine-readable storage or transmission medium which, when executed on a computer, causes the computer to perform a method of performing clear operations in a region having a subregion, comprising:

**responsive to a clear command:**

**leaving a current clear count for the region unchanged;**

writing a predetermined value into each of the pixels of the subregion, but not into the pixels outside the subregion; and

*writing the current clear count into clear count storage locations corresponding to each of the pixels of the subregion, but not into clear count storage locations corresponding to the pixels outside the subregion.*

28. Computer program code embodied in a machine-readable storage or transmission medium which, when executed on a computer, causes the computer to perform a method of performing clear operations in a region having a subregion, comprising:

prior to creation of the subregion, responding to clear commands for the region according to a fast clear technique;  
*after creation of the subregion and during the life of the subregion, responding to clear commands for the region by:*  
*leaving a current clear count for the region unchanged;*  
writing a predetermined value into each of the pixels of the subregion, but not into the pixels outside the subregion; and  
*writing the current clear count into clear count storage locations corresponding to each of the pixels of the subregion, but not into clear count storage locations corresponding to the pixels outside the subregion;* and  
*after discontinuance of the subregion,* resuming responding to clear commands for the region according to the fast clear technique.

(*Emphasis added.*) Applicants respectfully submit that claims 27-28 patently define over the cited art for at least the reason that Murphy fails to disclose the features emphasized above.

Claim 27 closely parallels claim 1, and patently defines over Murphy for at least the same reasons set forth in connection with claim 1. Likewise, claim 28 closely parallels claim 8, and patently defines over Murphy for at least the same reasons set forth in connection with claim 8. Accordingly, Applicants respectfully submit that the rejections of claims 27 and 28 be withdrawn.

#### ***Independent Claims 18 and 29***

The Office Action rejected independent claims 18 and 29 under 35 U.S.C. §103(a) as allegedly unpatentable over Murphy.

Claims 18 and 29 recite:

18. A method of performing clear operations in a region having a subregion, comprising:  
*determining the percentage area of the region occupied by the subregion;* and  
*if the percentage area is not higher than a predetermined threshold percentage, responding to clear commands for the region by:*  
*leaving a current clear count for the region unchanged;*  
writing a predetermined value into each of the pixels of the subregion, but not into the pixels outside the subregion; and

***writing the current clear count into clear count storage locations corresponding to each of the pixels of the subregion, but not into clear count storage locations corresponding to the pixels outside the subregion.***

29. Computer program code embodied in a machine-readable storage or transmission medium which, when executed on a computer, causes the computer to perform a method of performing clear operations in a region having a subregion, comprising:

***determining the percentage area of the region occupied by the subregion; and***

***if the percentage area is not higher than a predetermined threshold percentage, responding to clear commands for the region by:***

***leaving a current clear count for the region unchanged;***

***writing a predetermined value into each of the pixels of the subregion, but not into the pixels outside the subregion; and***

***writing the current clear count into clear count storage locations corresponding to each of the pixels of the subregion, but not into clear count storage locations corresponding to the pixels outside the subregion.***

(Emphasis added.) Applicants respectfully submit that claims 18 and 29 patently define over the cited art for at least the reason that Murphy fails to disclose the features emphasized above.

First, each of these claims patently define over Murphy for at least the same reason as claim 1, as they include the distinguishing features of claim 1, which were discussed above.

Second, the Examiner has inappropriately substituted his own subjective judgment in rejecting these claims (which is clearly inappropriate). In this regard, the Examiner tacitly admitted that Murphy does not teach the determination of whether a percentage area of a region occupied by a subregion exceeds a predetermined amount (and performing the inventive fast clear only if it does). However, lacking this express teaching, the Examiner merely declared that such would be obvious.

As a separate and independent basis for the patentability of these claims, Applicants respectfully submit that the rejection is misplaced, as the Office Action failed to cite any

proper motivation to support the extension of Murphy to the features of these claims. In this regard, the rationale set forth in the Office Action is completely subjective on the part of the Examiner. The Office Action alleged only that the combination would have been obvious "because by dividing the region, this region is much smaller than the full window and hence takes less time to clear..." This rationale is misplaced.

In this regard, the prevailing legal standards have been developed to prevent nebulous and vague subjective rationales (such as the conclusion that quality would be enhanced) from supporting rejections under 35 U.S.C. § 103. It is well-settled law that in order to properly support an obviousness rejection under 35 U.S.C. §103, there must have been some teaching in the prior art to suggest to one skilled in the art that the claimed invention would have been obvious. *W. L. Gore & Associates, Inc. v. Garlock Thomas, Inc.*, 721 F.2d 1540, 1551 (Fed. Cir. 1983). More significantly,

"The consistent criteria for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this [invention] should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. ..." Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure... In determining whether such a suggestion can fairly be gleaned from the prior art, the full field of the invention must be considered; for the person of ordinary skill in the art is charged with knowledge of the entire body of technological literature, including that which might lead away from the claimed invention."

(*Emphasis added.*) *In re Dow Chemical Company*, 837 F.2d 469, 473 (Fed. Cir. 1988).

In this regard, the Applicants note that there must not only be a suggestion to broaden the functional or operational aspects of the cited reference, but that the Federal Circuit also requires the prior art to suggest the structure resulting from the combination. *Stiftung v. Renishaw PLC*, 945 Fed.2d 1173 (Fed. Cir. 1991). Therefore, in order to sustain an obviousness rejection, the prior art must properly suggest the desirability of providing a fast clear operation, as claimed by the Applicants. "Particular findings must be made as to the

reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed." In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

"A showing of a suggestion, teaching, or motivation to combine the prior art references is an essential component of an obviousness holding." Brown & Williamson Tobacco Corp. v. Philip Morris Inc., 229 F.3d 1120, 1124-25, 56 USPQ2d 1456, 1459 (Fed.Cir.2000)) (quoting C.R. Bard, Inc., v. M3 Systems, Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed.Cir.1998)); The Federal Circuit has made it clear "that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."); In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed.Cir.1999).

Simply stated, the rejection under 35 U.S.C. § 103 set forth by the Examiner fails to satisfy these fundamental legal requisites, and the rejections under 35 U.S.C. § 103 should be withdrawn.

#### ***Dependent Claims 19-26***

Claims 19-26 depend from claim 18 and define over Murphy for at least the same reasons as claim 18. In addition, the undersigned respectfully submits that the Office Action has failed cite proper teachings within Murphy that disclose these claimed features. For example, with regard to claims 19 and 20, these claims define the predetermined threshold percentage to be about 75% and about 70%, respectively. The Office Action alleges that these features are disclosed in Murphy in col. 48, lines 12-13 and col. 47, lines 62-63. In fact,

these cited portions of Murphy teach nothing of the sort. In this regard, these portions of Murphy specifically disclose (respectively):

...In this way the alpha component of a fragment represents the percentage pixel coverage...

And

... In RGBA mode the alpha value is multiplied by the coverage value calculated in the rasterizer (its range is 0% to 100%)....

As is readily verified, there is no teaching of a threshold percentage of 70% or 75% as claimed. For at least this reason, the rejections of claims 19 and 20 are misplaced. In addition, the “alpha” component that Murphy is discussing relates to a transparency value (and not a threshold percentage coverage of a subregion within a region). Accordingly, the application of these portions of Murphy is completely misplaced with respect to the claimed features. Further still, the second cited teaching in Murphy cites a range of 0% to 100%, which is, in effect, no teaching whatsoever, as everything falls within 0% to 100%.

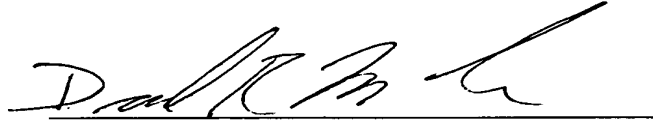
### **CONCLUSION**

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to Hewlett-Packard Company's deposit account No. 08-2025.

Respectfully submitted,

By:



Daniel R. McClure  
Registration No. 38,962

770-933-9500

Please continue to send all future correspondence to:

Hewlett-Packard Development Company, L.P.  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400